

FLIGHT STANDARDIZATION BOARD (FSB) REPORT

(Revision 3)

BOMBARDIER GLOBAL EXPRESS/GLOBAL 5000

BD-700-1A10

BD-700-1A11



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REVISION RECORD

<u>Revision No.</u>	<u>Section(s)</u>	<u>Page #'s</u>	<u>Date</u>
Original	All	All	7/14/99
1	All	All	1/14/2005
2	Contents	2	9/02/05
2	Highlights of Change	4	9/02/05
2	2.1	6	9/02/05
2	7.1	10	9/02/05
2	Section 9, 10, 11	11, 12, 13	9/02/05
2	Appendix 3	22, 23	9/02/05
2	Appendix 6	49, 50, 51, 52	9/02/05
2	Appendix 7	53, 54, 55, 56, 57	9/02/05
3	Appendix 6	50	8/28/08

HIGHLIGHTS OF REVISION 2 CHANGE

Revision 2 adds Appendix 3, Appendix 6 [Head-Up Display system], and Appendix 7 [Bombardier Enhanced Vision System] to this report.

Revision 3 corrects a typographical error in Appendix 6 Thales Head-UP Display System (HUD)] paragraph 5.1 regarding the minimum requirement for ground school. The change is from 4 hours to 2 hours as the minimum requirement.

1 PURPOSE

1.1 The primary purpose of this report is to specify FAA master training, checking and currency requirements applicable to crews operating the Bombardier Global Express/Global 5000. This report can assist 14 CFR Part 135 or 125 Operators, FAA Principal Operations Inspectors (POI's), and 14 CFR Part 142 training centers and their FAA Training Center Program Managers (TCPMs) in the development and approval of 14 CFR Part 135 and 142 training programs. Provisions of this report are effective until amended, superseded, or withdrawn by subsequent FSB determinations.

1.2 Relevant acronyms are defined as follows:

AC	Advisory Circular
ACO	Aircraft Certification Office
AEG	Aircraft Evaluation Group
AFCs	Automatic Flight Control System
AFM	Airplane Flight Manual
AP	Autopilot
ATP	Airline Transport Pilot
BA	Bombardier Aerospace
CFR	Code of Federal Regulations
EFIS	Electronic Flight Instrument System
EGPWS	Enhanced Ground Proximity Warning System
EICAS	Engine Indication and Crew Alerting System
EMS	Electrical Management System
FDA	Flight Director Annunciator
FCOM	Flight Crew Operating Manual
FGP	Flight Guidance Panel
FMS	Flight Management System
FSB	Flight Standardization Board
FTD	Flight Training Device
NSP	National Simulator Program
PFD	Primary Flight Display
POI	Principal Operations Inspector
PTS	Practical Test Standards
QRH	Quick Reference Handbook
TCAS	Traffic Alert and Collision Avoidance System

2 TERMINOLOGY

- 2.1 The term “must” is used in this report, even though it is recognized that this report, and the Advisory Circular AC 120-53 on which it is based, provides one acceptable means, but not necessarily the only means, of compliance with 14 CFR Part 61 or 14 CFR Part 135, Subpart H requirements. The term “must” acknowledges the need for operators to fully comply with the FSB report provisions if AC 150-53 is to be used by the operator as its means of complying with 14 CFR Part 135, Subpart H.

3 BACKGROUND

- 3.1 The Global Express is a high altitude, ultra long-range business jet certified under Title 14 of the Code of Federal Regulations (14 CFR) Part 25. The Global Express is listed on FAA Type Certificate Data Sheet T00003NY as model BD-700-1A10. The FSB conducted a joint operational evaluation of the Global Express with three Civil Aviation Inspectors from Transport Canada resulting in the issuance of concurrent FSB and Transport Canada Operational Evaluation Reports. This was the first time that the FAA and Transport Canada have accomplished a joint operational evaluation.
- 3.2 From May 4 to May 26, 1999, the Global Express Flight Standardization Board (FSB) received the Global Express proposed initial pilot training course provided by Bombardier Aerospace (BA) at its Training Center located in Montreal, Canada. Training consisted of: classroom instruction, use of a level 7 Flight Training Device and an interim level C Flight Simulator, both of which were qualified by the FAA National Simulator Program (NSP). Bombardier proposed, and the FSB evaluated, an Advisory Circular (AC) 120-53 test T5, which is an evaluation of all the FAA Practical Test Standards (PTS) maneuvers required for an airman to receive a pilot type rating. This was accomplished in Global Express aircraft registration numbers C-FKGX (serial #9004) and C-FJGX (serial #9003), in Wichita, Kansas, from June 2-4, 1999. The FSB conducted seven flight legs, totaling approximately twenty flight hours to determine if the Global Express is suitable for operation in the U.S. under 14 CFR parts 91, 125 and 135. In the time available on those flights, the FSB also evaluated a majority of the AFM normal, abnormal, and emergency procedures.
- 3.3 The Global 5000 is a high altitude, long- range business jet certified under Title 14 of the Code of Federal Regulations (14 CFR) part 25. The Global 5000 is listed on FAA Type Certificate Data Sheet T00003NY as model BD-700-1A11. The Global 5000 FSB conducted a joint operational evaluation with two Civil Aviation Inspectors from Transport Canada, resulting in the issuance of concurrent FSB and Transport Canada Operational Evaluation Reports. In addition, there were two representatives from Joint Aviation Authorities (JAA Europe).
- 3.4 From August 16 to September 8, 2004, the FAA member of the Global 5000 Flight Standardization Board (FSB) evaluated the Global Express proposed initial pilot training course provided by Bombardier Aerospace (BA) at its training center located in

Montreal, Canada. Training consisted of: classroom instruction, use of a level 5 Flight Training Device and a level D Flight Simulator, both of which were qualified by the FAA National Simulator Program (NSP).

3.5 Two Transport Canada members of their Operational Evaluation Board were qualified on the Global 5000, and they attended a recurrent class at the Bombardier Aerospace Training Center in Montreal, Canada. The JAA representatives were current in the aircraft as they joined the process. Bombardier proposed, and the FSB evaluated, Advisory Circular (AC) 120-53 test T1, which is an evaluation of all the FAA Practical Test Standards (PTS) maneuvers required for an airman to receive a pilot type rating. This was accomplished in Global 5000 aircraft registration number C-GLRM (serial #9130), in Wichita, Kansas, from September 13-20, 2004. The FSB conducted 24 flight legs, totaling approximately 50 flight hours to determine if the Global 5000 is suitable for operation in the U.S. under 14 CFR Parts 91, 125 and 135. In the time available on those flights, the FSB also evaluated a majority of the AFM normal, abnormal, and emergency procedures.

3.6 The FSB is responsible for conducting evaluations of future changes to the Global Express/Global 5000 (such as engine changes, systems and instrumentation changes, software changes or installation of new systems) and its derivatives. The FSB will determine the impact those change have on training, checking and currency, and will amend this report accordingly.

4 APPLICATION OF FSB REPORT

4.1 The guidelines in this report apply to: Operations Aviation Safety Inspectors, Principal Operations Inspectors (POI), Training Center Program Managers (TCPM), Aircrew Program Managers (APM), 14 CFR part 135 Air Carrier Check Airmen and Instructors, Airline Transport Pilots instructing in air transportation service, Certificated Flight Instructors, Certificated Ground Instructors, Designated Pilot Examiners, Pilot Proficiency Examiners, Aircrew Program Designees, and Training Center Evaluators.

5 PILOT "TYPE RATING" REQUIREMENTS

5.1 In accordance with 14 CFR Parts 1 and 61, and 135, the same type rating is assigned to the Global Express/Global 5000, and is designated "BBD-700". The Global Express and Global 5000 have not been issued a new Type Certificate (TC) Data Sheet. The Global 5000 was added to the existing Global Express Data Sheet. The FSB did not conduct a comparison between the Global Express/Global 5000 and any other aircraft models; therefore, no credit shall be given for training, checking, or currency between the Global Express/Global 5000 and any other aircraft.

6 "MASTER COMMON REQUIREMENTS" (MCRs)

- 6.1 The Master Common Requirements specify those items of crew qualification that apply to the BD-700-1A11 and BD-700-1A10 airplanes.

6.2 General Configuration

The BD-700-1A10 (Global Express) was the first in the series of aircraft to enter service. It was followed by the variant BD-700-1A11 (Global 5000), which is simply a shorter version.

- 6.3 **Differences** of the BD-700-1A11 include:

1. Decrease max takeoff weight
2. Shorter fuselage
3. Less fuel capacity

The pilot/machine interface shares a high degree of commonality. Both aircraft have identical avionics systems. With the exception of the fuel panel, the cockpits are identical.

- 6.4 **V Speeds (V_1 , V_R , V_2 , V_{FTO} , V_{REF} , V_{AC})**

All maximum speeds for landing gear, slats and flaps are identical for both aircraft. V Speeds for takeoffs and approaches are dependent upon aircraft weight and are identical at the same weight.

Critical speeds for both aircraft are presented to the pilot in the same standardized manner.

- 6.5 **Normal ‘Final’ Landing Flap Setting**

The normal ‘final’ landing flap is 30 degrees for both aircraft.

- 6.6 **Automatic Flight Control System (AFCS)**

The AFCS pilot/machine interface is the same for both aircraft.

- 6.7 **Heads Up Display (HUD)**

Both aircraft share the same Thales HUD equipment. The HUD pilot/machine interface is the same for both aircraft.

- 6.8 **Electronic Flight Instrument System (EFIS)**

The EFIS pilot/machine interface is the same for both aircraft.

6.9 Navigation and Communication

Both aircraft share the same navigation and communication equipment. Pilot operation of the equipment is the same for both aircraft.

6.10 Engine Indicating and Crew Alerting System (EICAS)

The EICAS philosophy is the same for both aircraft. Only minor changes to crew alerting messages and applicable synoptic page architecture have been made to support the changes in fuel system and the above cabin floor avionics rack.

6.11 Primary and Secondary Flight Controls

Pilot operation of the primary and secondary flight controls is the same for both aircraft.

6.12 Aircraft Systems

Except for the fuel system, all systems are the same for both aircraft.

6.13 Takeoff, Climb and Descent Profiles

The takeoff, climb and descent profiles are the same for both aircraft.

6.14 Approach Profiles

The approach profiles are the same for both aircraft

6.15 Abnormal & Emergency Procedures

Immediate Action items are identical for both aircraft.

Abnormal and emergency procedures are presented in Quick Reference Handbooks (QRH). The QRH's for both aircraft share an identical presentation format and direct the pilots to carry out emergency or abnormal procedures in a methodical and structured manner.

6.16 Minimum Height for use of the Autopilot (FAR 91/FAR 135.93):

The minimum height for the use of the autopilot is 400 feet AGL (Part 135 - 500') following takeoff in both airplanes.

6.17 Landing Minima Category

The following straight-in approach minima, based on Maximum Landing Weight (MLW), for both aircraft are as follows:

Aircraft	Landing Flap	Category
BD-700-1A10	30 degrees	C
BD-700-1A11	30 degrees	C

7 "MASTER DIFFERENCE REQUIREMENTS"

7.1 Master Differences Requirements (MDRs) for the Global Express and Global 5000 are shown in the following table. These provisions apply when differences between variants exist which affect crew knowledge, skills, or abilities related to flight safety (e.g. Level A or greater differences).

AIRPLANE TYPE RATING: BBD-700		FROM AIRPLANE	
T O A I R P L A N E		BD-700-1A10	BD-700-1A11
	BD-700-1A10	---	A / A / A
	BD-700-1A11	A / A / A	---

[**NOTE:** For Global Express or Global 5000 aircraft equipped with the Thales Head-Up Display (HUD) system and/or the Bombardier Enhanced Vision System (BEVS), reference the additional training, testing, and checking requirements found in Appendices 6 and 7 of this FSB report.]

8 ACCEPTABLE "OPERATOR DIFFERENCE REQUIREMENTS" (ODRs) TABLES

8.1 Operator Difference Requirement (ODR) tables are used to show an operator's compliance method. ODR tables for operators conducting mixed fleet operations, using the Global Express and Global 5000 are shown in Appendix 1 and Appendix 2. The ODR tables represent an acceptable means to comply with MDR provisions based on those differences and compliance methods shown. The tables do not necessarily represent the

only acceptable means of compliance for operators with airplanes having other differences, where compliance methods (e.g., devices, simulators, etc.) are different. For operators flying the Global Express and Global 5000 the ODR tables in Appendices 1 and 2 have been found acceptable, and therefore, may be approved by a POI for a particular operator.

8.2 Operator Preparation of ODR Tables:

Operators seeking different means of compliance must prepare and seek FAA approval from their POI of specific ODR tables pertinent to their fleet. The POI should coordinate this with the FSB Chairman and AFS-200.

8.3 ODR Table Coordination:

New ODR tables proposed by operators should be coordinated with the FSB prior to FAA approval and implementation. Through this coordination, the FSB can ensure consistent treatment of variants between various operators' ODR tables and compatibility of the MDR table with MDR provisions.

8.4 ODR Table Distribution:

Originally approved ODR tables are retained by the operator. Copies of approved Global Express and Global 5000 tables are retained by the Certificate Management Office (CMO). Copies of all approved ODR tables should be forwarded to the FSB Chairman, Long Beach Aircraft Evaluation Group (AEG).

9 FSB SPECIFICATIONS FOR TRAINING

9.1 General:

9.1.1 The provisions of this training section apply to the Global Express and Global 5000, to programs for airmen having previous experience in 14 CFR Part 91 or 14 CFR Part 135 air carrier operations, and multi-engine turbojet or turboprop aircraft. Additional requirements, as determined by the operator's POI, the FSB, and AFS-200, may be necessary for airmen not having such experience.

9.2 Initial, Transition and Upgrade Training:

9.2.1 Pilot Initial, Transition, and Upgrade Ground Training is accomplished in accordance with 14 CFR Part 135.343, 135.345, and SFAR 14 CFR SFAR 58, Advanced Qualification Program (AQP).

9.2.2 Pilot Initial, Transition, and Upgrade Flight Training are accomplished in accordance with 14 CFR part 135.347. [Reference Appendix 4 for a typical initial

ground and flight training course outline for the Global Express/5000.]

9.3 Recurrent Training:

9.3.1 Recurrent Ground Training is accomplished in accordance with 14 CFR part 135.351 and SFAR part 58 (AQP).

9.3.2 Recurrent Flight Training is accomplished in accordance with 14 CFR part 135.351 and requires that the pilot be proficient in those maneuvers and procedures that are required for the original issuance of the pilot certificate.

9.4 Differences Training:

Differences training is accomplished in accordance with 14 CFR part 135.347. If both the Global Express and Global 5000 are to be flown, appropriate instruction in design and systems differences will be required for both airplanes, consistent with MDR provisions listed in Section 7.

9.5 Other Training:

9.5.1 Flight Attendant Training is accomplished in accordance with 14 CFR part 135.341 if a flight attendant is utilized. The Global Express and Global 5000 have a maximum seating capacity of 19 seats and therefore, do not require a Flight Attendant.

9.5.2 Aircraft Dispatcher Training, Flight Engineer Training, and Flight Navigator Training are not applicable.

9.5.3 Special Emphasis Training is contained in Appendix 3 and lists special emphasis items that are to be included in an approved training program.

10 FSB SPECIFICATIONS FOR CHECKING

10.1 General

10.1.1 The provisions of this checking section apply to the Global Express and Global 5000. Testing, checking and evaluations specified by 14 CFR Parts 61.57, 61.58, 61.63, 61.67, 61.157, 61.159, 135.293, 135.297, SFAR 58, and FAA Practical Test Standards (PTS) apply.

10.1.2 The following areas of emphasis must be demonstrated during checking:

- (a) Proficiency in manual and automatic (including FMS) flight in normal, abnormal, and emergency situations must be demonstrated at each proficiency/competency check by all crewmembers.

- (b) The use of manual modes to operate systems such as electrical, hydraulic, pressurization, environmental, etc. and emergency equipment must be demonstrated at each proficiency/competency check by all crewmembers.
- (c) Demonstration of a no flap approach and landing during a pilot type rating or 14 CFR part 135 check is required per the Airline Transport Pilot and/or Type Rating Practical Test Standards - FAA-S-8081 Area of Operation VI, Task F. In accordance with Order 8400.10, when the flight demonstration is conducted in an airplane, verses a simulator, touchdown from a no flap approach is not required and shall not be attempted. However, the approach should be flown to the point where the inspector or examiner can determine whether a touchdown at an acceptable point on the runway and a safe landing to a full-stop could be made.

10.2 Type Ratings:

Type rating Practical Tests are administered in accordance with 14 CFR Parts 61.63, 61.157, 61.159, SFAR 58 and the Practical Test Standards.

10.3 Competency/Proficiency Checks and Evaluations:

Competency/Proficiency checks and evaluations are administered in accordance with 14 CFR Parts 61.58, SFAR 58, 135.293, and 135.297. .

11 FSB SPECIFICATIONS FOR CURRENCY

11.1 Currency (Recency of Experience):

Currency is considered to be common for the Global Express and Global 5000. Separate tracking of currency for the Global Express and Global 5000 is not necessary or applicable. Currency will be maintained, or re-established, in accordance with 14 CFR Parts 61.57, 61.58, 135.247 and/or 135.351.

12 AIRCRAFT REGULATORY COMPLIANCE CHECKLIST

- 12.1 Aircraft serial number 9004, a Global Express, was utilized by the FSB to conduct its evaluation on June 8, 1999. Aircraft serial number 9130, a Global 5000, was utilized by the FSB to conduct its evaluation from September 13-20, 2004. These aircraft were representative of production versions. It enabled the FSB to determine compliance with the appropriate 14 CFR parts 91, 125 and 135 operating requirements. The attached checklist, in Appendix 5, provides the FSB findings on those operating requirements. It may be used by Principal Inspectors to assist in determining operator compliance.

- 12.2 The aircraft are delivered without interior finishing or paint, in a “green” configuration, from the factory, therefore the completion center must determine final payload capacity of the airplane.
- 12.3 It is possible that individual aircraft could be outfitted to operate in excess of 6,000-pound payload. Such operators would have to show compliance with 14 CFR Part 125 requirements, or a letter of deviation authority would have to be obtained.
- 12.4 An operator of a Global Express/Global 5000 aircraft must demonstrate to the FAA that the aircraft fully complies with all applicable operating rules prior to that aircraft entering service.

13 FSB SPECIFICATIONS FOR DEVICES AND SIMULATORS

Device and simulator characteristics are designated in AC 120-40 and 120-45 (as amended). The acceptability of differences between devices, simulators, and aircraft must be addressed by the NSP and the POI. Requests for device approval should be made to the POI. The POI may approve those devices for operators if their characteristics clearly meet the established FAA criteria and have been qualified by the National Simulator Program (NSP).

14 APPLICATION OF FSB REPORT

All relevant parts of this report are applicable to operators on the effective date of this report.

15 ALTERNATE MEANS OF COMPLIANCE TO THIS REPORT

- 15.1 The FSB chairman should be consulted by the POI when alternate means of compliance, other than those specified in this report, are proposed. The FAA General Aviation and Commercial Division, AFS-800 or the FAA Air Transportation Division, AFS-200, must approve alternate means of compliance. If an alternate means of compliance is sought, operators will be required to submit a proposed alternate means for approval that provides an equivalent level of safety to the provisions of AC 120-53 and this FSB report. Analysis, demonstrations, proof of concept testing, differences documentation, and/or other evidence may be required.
- 15.2 In the event that alternate compliance is sought, training program hour reductions, simulator approvals, and device approvals may be significantly limited and reporting requirements may be increased to ensure an equivalent level of training, checking, and currency. FAA will generally not consider relief through alternate compliance means unless sufficient lead-time has been planned by an operator to allow for any necessary testing and evaluation.

16 SUPPLEMENTAL BOARD REPORT - PART II

16.1 Part II of the FSB report contains historical development information used to develop Part I. This information is kept on file at the Long Beach Aircraft Evaluation Group, (LGB AEG), 3960 Paramount Boulevard, Lakewood, CA 90712-4137.

16.2 Documents kept on file are as follows:

- Global Express/Global 5000 FAA FSB Order (FSB member list)
- Global Express/Global 5000 Training syllabus of FSB members
- Global Express/Global 5000 Original Aircraft Flight Manual
- Global Express/Global 5000 Operations Manuals
- Global Express/Global 5000 Master Minimum Equipment List
- Global Express/Global 5000 Operational Issue Papers

APPENDIX 1 - Operator Differences Requirements – BD-700-1A10 (Global Express) to BD-700-1A11 (Global 5000)

DIFFERENCE AIRCRAFT BD-700-1A11 (Global 5000) BASE AIRCRAFT: BD-700-1A10 (Global Express) APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHN G	LVL A	LVL B	LVL C	LVL D	CHK	CURR
20 Aircraft General	<u>Fuselage</u> Length: 96 ft. 10 in. (29.49 m) Decrease of 32 inches (.81 m) Removal of two side windows Wingspan: 93 ft. 6 in. (28.65 m) No change Tailspan: 31ft. 9 in. (9.68 m) No change Height (SATCOM): 25 ft. 8 in. (7.83 m) No change	No	No	HO				A	A
20 Aircraft General	<u>Performance</u> Max T.O. Weight: 87,700 lb. (39,780 kg) Decrease of 8,300 lb. (3,766 kg) Max Landing Weight: 78,600 lb. (35,652 kg) No change Fuel Capacity: 36,000 lb. (16,329 kg) Decrease of 7,350 lb. (3,421 kg)	No	No	HO				A	A
20 Aircraft General	<u>Wheel Base</u> Nose to Main Wheels: 40 ft, 2 in. (12.25 m) Decrease of 2 ft 8 in (.81 m)	No	No	HO				A	A

DIFFERENCE AIRCRAFT BD-700-1A11 (Global 5000) BASE AIRCRAFT: BD-700-1A10 (Global Express) APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
28 Fuel	Removal of aft fuel tank	No	No	HO				A	A
28 Fuel	Fuel recirculation is now an automatic system	No	See note	HO				A	A
31 Indicating / Recording Systems	New fuel synoptic page	No	No	HO				A	A
				COMPLIANCE METHOD					

Note: The fuel recirculation, which is currently a manual system on the Global Express, becomes an automatic system on the 5000 and sequential Global Express.

DIFFERENCE AIRCRAFT BD-700-1A11 (Global 5000) BASE AIRCRAFT: BD-700-1A10 (Global Express) APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
28 Fuel	Reduction in centre tank capacity	No	No	HO				A	A
28 Fuel	Minor EICAS/Synoptic page changes	No	No	HO				A	A
28 Fuel	Fuel control panel, deletion of switches and switch labels changed	No	See note	HO				A	A
28 Fuel	Refueling panel, deletion of switches and switch labels changed	No	No	HO				A	A

Note: The Fuel RECIRC switches become an inhibited function vice an ON/OFF one

DIFFERENCE AIRCRAFT BD-700-1A11 (Global 5000) BASE AIRCRAFT: BD-700-1A10 (Global Express) APPROVED BY (POI) _____				COMPLIANCE METHOD								
				TRAINING				CHKG/CURR				
MANEUVER	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CUR R			
Taxi	Very slight decrease in taxi turning radius (TBA)	No	No	HO				A	A			
				COMPLIANCE METHOD								

**APPENDIX 2 - Operator Differences Requirements –BD-700-1A11 (Global 5000) to
BD-700-1A10 (Global Express)**

DIFFERENCE AIRCRAFT BD-700-1A10 (Global Express) BASE AIRCRAFT: BD-700-1A11 (Global 5000) APPROVED BY (POI)_____				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
20 Aircraft General	<u>Fuselage</u> Length: 99 ft. 5 in. (30.30 m) Increase of 32 inches (.81 m) Addition of two side windows Wingspan: 93 ft. 6 in. (28.65 m) No change Tailspan: 31ft. 9 in. (9.68 m) No change Height (SATCOM): 25 ft. 8 in. (7.83 m) No change	No	No	HO				A	A
20 Aircraft General	<u>Performance</u> Max T.O. Weight: 96,000 lb. (43,546 kg) Increase of 8,300 lb. (3,766 kg) Max Landing Weight: 78,600 lb. (35,652 kg) No change Fuel Capacity: 43,550 lb. (19,750 kg) Increase of 7,350 lb. (3,421 kg)	No	No	HO				A	A
20 Aircraft General	<u>Wheel Base</u> Nose to Main Wheels: 42 ft, 10 in. (12.25 m) Increase of 2 ft 8 in (.81 m)	No	No	HO				A	A

DIFFERENCE AIRCRAFT BD-700-1A10 (Global Express) BASE AIRCRAFT: BD-700-1A11 (Global 5000) APPROVED BY (POI) _____				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
DESIGN	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
28 Fuel	Addition of aft fuel tank	No	No	HO				A	A
28 Fuel	Fuel recirculation is now a manual system	No	See note	HO				A	A
31 Indicating / Recording Systems	New fuel synoptic page	No	No	HO				A	A
				COMPLIANCE METHOD					

Note: The fuel recirculation, which is currently a manual system on the Global Express, becomes an automatic system on both the 5000 and for subsequent Global Express.

DIFFERENCE AIRCRAFT BD-700-1A11 (Global Express) BASE AIRCRAFT: BD-700-1A10 (Global 5000) APPROVED BY (POI) _____				COMPLIANCE METHOD					
				TRAINING				CHKG/CURR	
SYSTEM	REMARKS	FLT CHAR	PROC CHNG	LVL A	LVL B	LVL C	LVL D	CHK	CURR
28 Fuel	Increase in centre tank capacity	No	No	HO				A	A
28 Fuel	Minor EICAS/Synoptic page changes	No	No	HO				A	A
28 Fuel	Fuel control panel, addition of switches and switch labels changed	No	See note	HO				A	A
28 Fuel	Refueling panel, addition of switches and switch labels changed	No	No	HO				A	A
				COMPLIANCE METHOD					

Note: The Fuel RECIRC switches become an ON/OFF function vice an inhibited one

DIFFERENCE AIRCRAFT BD-700-1A11 (Global Express) BASE AIRCRAFT: BD-700-1A10 (Global 5000) APPROVED BY 21 (POI) _____				COMPLIANCE METHOD													
												TRAINING				CHKG/CURR	
												LVL A	LVL B	LVL C	LVL D	CHK	CUR R
MANEUVER	REMARKS	FLT CHAR	PROC CHNG														
Taxi	Very slight increase in taxi turning radius. Radius is 68 feet. (20.9 m)	No	No	HO				A	A								
				COMPLIANCE METHOD													

APPENDIX 3 – GLOBAL EXPRESS/5000 TRAINING PROGRAM SPECIAL EMPHASIS ITEMS

The FSB has identified several aircraft systems and/or procedures that must receive special emphasis in a Global Express/Global 5000 Training Program:

Ground Training:

- 1) High altitude physiology
- 2) Fatigue, sleep loss, and circadian disruption
- 3) International operating procedures for special use airspace such as: MNPS, RVSM, RNP-10, and RNP-5 operations.
- 4) Flight Management System (FMS)
- 5) Fuel characteristics and fuel temperature management at high altitudes and cold temperatures.
- 6) Wing leading edge contamination and its effect on clean (slats IN / flaps up) stall speed.
- 7) DC Power system failure modes with emphasis on loss of all DC electrical power, including the relationship and significance of thermal circuit breakers in the Cockpit Circuit Breaker Panel.
- 8) Thales Head-Up Display System (HUD) (See Appendix 6)
- 9) Bombardier Enhanced Vision System (BEVS) (See Appendix 7)
- 10) Fuel recirculation inhibits.
- 11) FMS landing field length.

Systems Integration Training (Flight Training Device - Level 5):

- 1) Automatic Flight Control System (AFCS)
- 2) Primary Flight Display (PFD) Flight Director Annunciations (FDA)
- 3) Flight Management System (FMS)
- 4) Electrical Management System (EMS)
- 5) Thales Head-Up Display System (HUD) (See Appendix 6)
- 6) Bombardier Enhanced Vision System (BEVS) (See Appendix 7)
- 7) Guidance Panel Indications/Selections for autopilot, yaw damper, and coupling.

Flight Training (Full Flight Simulator - Level C or D and/or aircraft):

- 1) Aileron/elevator disconnect (jammed controls in each axis).
- 2) Primary Flight Display (PFD), Multifunction Display (MFD), and EICAS reversionary modes.
- 3) Integrated use of EICAS messages, switch positions and synoptic pages to determine aircraft system status.
- 4) Delayed engine response to full power applications at high altitudes (especially high altitude stalls).
- 5) Low energy rejected landing from idle thrust.

- 6) High altitude (above 45,000 ft.) handling characteristics with the autopilot and yaw damper inoperative.
- 7) AFCS pitch (PIT) mode characteristics (flight path vs. pitch angle).
- 8) Enhanced GPWS (including the loss of terrain mode when making MFD selections).
- 9) Traffic Collision and Avoidance System (TCAS)
- 10) Thales Head-Up Display System (HUD) (See Appendix 6)
- 11) Bombardier Enhanced Vision System (BEVS) (See Appendix 7)
- 12) Loss of all DC Power
- 13) Stall warning advance.
- 14) Loss of Autothrottle during One Engine Inoperative Flight.

The FSB also found that early exposure to the AFCS, autothrottles, and FMS is important, especially for pilots with no previous EFIS, autothrottle or FMS experience. Establishing early confidence in manually flying the aircraft, converting from manual to automatic (FMS controlled) flight mode and back is equally important due to heavy reliance on the AFCS. In the event of a flight path deviation due to input error or system malfunction, the flight crew must be able to comfortably transition from automatic to manual operation and back in an orderly fashion consistent with Certificate holder's automation philosophy.

APPENDIX 4 - BD-700-1A10 (GLOBAL EXPRESS/GLOBAL 5000) FAA PILOT INITIAL COURSE OUTLINE

Day	Ground Training	Ground Training System Integration
1	<ul style="list-style-type: none"> ▪ Intro, ▪ Aircraft General, ▪ EFIS, ▪ Fuel 	
2	<ul style="list-style-type: none"> ▪ Power Plant, ▪ Fire protection ▪ CRM/SM ▪ FMS 	
3	<ul style="list-style-type: none"> ▪ Nav./Comm. ▪ AFCS 	System Integration FTD 1
4	<ul style="list-style-type: none"> ▪ APU ▪ Nav. ▪ Emerg. Equip./LTS 	System Integration FTD 2
5	<ul style="list-style-type: none"> ▪ Electrics 	System Integration FTD 3
6	<ul style="list-style-type: none"> ▪ Hydraulics ▪ Flight Control ▪ Ldg Gear & Brakes ▪ Performance 	
7	<ul style="list-style-type: none"> ▪ Performance ▪ IAMS (Integrated Air Management Systems) ▪ Ice/Rain protection 	
8	<ul style="list-style-type: none"> ▪ Performance 	System Integration FTD 4
9	<ul style="list-style-type: none"> ▪ Weight & Balance ▪ Review/Exam ▪ High Altitude Indoc. 	FLIGHT training FTD - Simulator
		Flight Training 1 FTD
10	<ul style="list-style-type: none"> ▪ Walk Around ▪ Air Procedures (RVSM, RNP 5/10) 	Flight Training 2 FTD
11		Flight Training 3 Simulator
12		Flight Training 4 Simulator
13		Flight Training 5 Simulator
14		Flight Training 6 Simulator
15		Flight Training 7 Simulator
16		Checkride

APPENDIX 5 AIRCRAFT REGULATORY COMPLIANCE CHECKLIST

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
91. 9	(a)	Compliance with Flight Manual, Markings, and Placard Markings	The Internal / External Markings of the green aircraft configuration comply with FAR 25 requirements.	Operator's responsibility.	Drawings were not made available during FSB to determine compliance.
91. 9	(b)(1)	Availability of Current Airplane Flight Manual in Aircraft	An FAA approved Airplane Flight Manual complying with FAR 25.1581 is provided with each aircraft. A current AFM and revision service is provided.	Operator's responsibility	AFM FAA approved on December 15, 1998 revision original, valid June, 1999. Operators are responsible for ensuring the AFM is current.
91. 9	(c)	Identification of Aircraft in Accordance with FAR 45	A fireproof identification plate complying with FAR 45 is included in the baseline configuration.		Complies

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
91.191		Category II and Category III Manual	Certification for Cat II operations will be conducted after initial Type Certification. An approved Airplane Flight Manual, including Category II procedures, instructions and limitations, will be provided with each aircraft. An approved maintenance schedule as per the Maintenance Review Board (MRB) Report, derived from the MSG-3 process, and an Aircraft Maintenance Manual complying with FAR 25.1529 and Appendix H are provided to each operator. These documents reflect the green aircraft as designed by Bombardier Aerospace and supplemented by Completion Center additions.	Operator's responsibility.	Compliance for CAT II approval will be sought at a later date. CAT III approval has not been requested at this time
91.203	(a),(b)	Valid C of A, Flight Permit, Registration Certificate.	1. Valid C of A for green aircraft will be provided at aircraft delivery and will be supplemented by Completion Center for completed aircraft. 2. It is operator responsibility to keep the aircraft continuously airworthy.	Operator's responsibility	1.Complies 2. Operators responsibility to ensure compliance.
91.203	(c)	Fuel Tanks in the Passenger/Baggage Compartment		Not applicable.	Concur
91.203	(d)	Fuel Venting and Exhaust Emissions Requirements	Compliance with FAR 34 requirements has been demonstrated during Type Certification.		Complies

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
91.205	(a)	General	Compliance not shown	Operator's responsibility.	Operators responsibility to ensure compliance.
91.205	(b)	Day VFR	All equipment specified for Day VFR, as applicable to a turbine engine aircraft is included in the baseline configuration except for Items: (12) - pyrotechnic signal devices are not provided (14) - not applicable (15) - ELT provisions only (17) - not applicable		Complies
91.205	(c)	Night VFR	All equipment specified for Night VFR, Items (2) thru (6) are included in the baseline configuration, except for: Item (6) - Spare fuses are not provided since all re-settable circuits by the flight crew are protected by circuit breakers.		Complies
91.205	(d)	IFR	All equipment specified for IFR flight, Items (2) thru (9) are included in the baseline configuration.		Complies
91.205	(e)	Flight at and Above FL240	Two DME systems are provided as part of the baseline configuration.		Complies
91.205	(f)	Category II Operations	Not applicable at this time. Certification for Cat II operations will be conducted after initial Type Certification..		Aircraft not evaluated for compliance at this time.
91.205	(g)	Category III Operations			Not requested by Bombardier at this time

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
91.211	(a)	General		Operator's responsibility	Operators responsibility to ensure compliance.Data will be provided by completion center.
	(b)	Pressurized Cabin Aircraft		Operator's responsibility	Operators responsibility to ensure compliance.Data will be provided by completion center.
91.213		Inoperative Instruments and Equipment		Operator's responsibility.	MMEL has been developed for this aircraft.
91.215	(a)	Transponder Performance and Environmental Requirements	Two Mode S Transponders with ATC Modes A and C conforming to TSO-C112 is included in the baseline configuration.		Complies
91.215	(b),(c) (d)	Transponder Operation		Operator's responsibility.	Operators responsibility to ensure compliance.
91.217	(a)	ATC - Directed Deviation		Operator's responsibility	Operators responsibility to ensure compliance.
91.217	(b)	Encoded Altitude Accuracy	Mode C altitude - encoding equipment capable of transmitting altitude with at least 125-foot accuracy is provided in the baseline configuration.	Periodic testing and calibration is an operator responsibility.	Complies
91.217	(c)	Altimeter-Encoding Equipment Specifications	Altimeters conform to TSO C10b and C88 respectively.		Complies
91.219	(a)	Operational Requirement for System		Operator's responsibility.	Operators responsibility to ensure compliance.

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
91.219	(b)	Requirements and Operation		Operator's responsibility to maintain system in an operable condition.	Complies
91.219	(c),(d)	Operational Procedures		Operator's responsibility.	Operators responsibility to ensure compliance.
91.221		TCAS			Complies
91.409		Inspections	An approved maintenance schedule as per the Maintenance Review Board (MRB) Report, derived from the MSG-3 process, and an Aircraft Maintenance Manual complying with FAR 25.1529 and Appendix H are provided to each operator. These documents reflect the green aircraft as designed by Bombardier Aerospace and supplemented by Completion Center additions.	Operator's responsibility.	Maintenance documents completed by Bombardier
91.411		Altimeter System and Altitude Reporting Equipment Tests and Inspections	The Maintenance Manual includes the tests and inspections required by Appendix E of FAR 43. The FAR 43 tests and inspections are conducted as a part of the Canadair Functional Test Plan for each aircraft prior to delivery.	Operator responsible for conducting tests and inspections.	Complies
91.413		ATC Transponder Tests and Inspections	The Maintenance Manual includes the tests and inspections required by Appendix E of FAR 43. The FAR 43 tests and inspections are conducted as a part of the Canadair Functional Test Plan for each aircraft prior to delivery.	Operator responsible for conducting tests and inspections.	Complies

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
91.503	(a)(1)	Flashlights	Two flashlights are provided as basic aircraft equipment.	Working condition is responsibility of operator.	Complies
91.503	(a)(2)	Cockpit Checklist	Checklists are provided in the Airplane Flight Manual / Flight Crew Operating Manual/Quick Reference Handbook (QRH).	Operator's responsibility.	Checklists in AFM are FAA approved. Checklists in FCOM and QRH are not FAA approved.
91.503	(a)(3) & (a)(4)	Aeronautical Charts		Operator's responsibility.	Operators responsibility to ensure compliance.
91.503	(a)(5)	One Engine Inoperative Climb Performance Data	The Airplane Flight Manual and Operating Manual contain the required data.		Complies
91.503	(b), (c)	Cockpit Checklist Contents	The Airplane Flight Manual contains all required checks.	Operator's responsibility to adhere to checklists and ensure that most current version is in use.	Checklists in AFM are FAA approved. Checklists in FCOM and QRH are not FAA approved.
91.503	(d)	Use of Data by Crew		Operator's responsibility.	Operators responsibility to ensure most current information is in use.
91.507		Equipment Requirement: Over the Top, or Night VFR	Installed in baseline configuration		Complies
91.511		Radio Equipment for Overwater Operations	Installed in baseline configuration		Complies
91.513		Emergency Equipment	Installed in baseline configuration		Complies
91.517		Passenger information		Operator's responsibility.	Operators responsibility to ensure compliance.
91.519		Passenger Briefing		Operator's responsibility.	Operators responsibility to ensure compliance.

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
91.521		Shoulder Harness	Installed		Complies
91.525		Carriage of Cargo		Operator's responsibility.	Operators responsibility to ensure compliance.
91.527		Operating in Icing Conditions			Flight into known icing conditions prohibited by AFM Limitation.
91.603		Aural Speed Warning Device	Speed warning devices which comply with FAR 25.1303(c)(1) are included in the baseline configuration.		Complies
91.605		Transport Category Civil Airplane Weight Limitations	Actual weight and balance manual provided with each delivered green aircraft. Completion Center to update the manual to reflect their additions.	Operator's responsibility.	Operators responsibility to ensure compliance.
91.609		Flight Recorders and Cockpit Voice Recorders	A digital flight data recorder conforming to TSO C124 is included in the baseline configuration, in accordance with FAR 25.1459. The FDR will be fully operational prior to aircraft entry into service.	Operator's responsibility.	Operators responsibility to ensure compliance.
91.609	(a)	Operation with Inactive Flight Data Recorder or Cockpit Voice Recorder		Operator's responsibility	Operators responsibility to ensure compliance
91.609	(b)	Operation by Other than Holder of Air Carrier or Commercial Certificate		Operator's responsibility	Operators responsibility to ensure compliance
91.609	(c)	Requirements for Flight Data Recorder - 10+ passengers		Operator's responsibility	Operators responsibility to ensure compliance

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
91.609	(d)	FDR Operations	The FDR operates from take-off roll to landing roll.		Complies
91.609	(e)(f)	Requirement for Cockpit Voice Recorder	A cockpit voice recorder conforming to TSO C123 is included in the baseline configuration in accordance with FAR 25.1457.		Complies
91.609	(g)	Accident Reporting		Operator's responsibility.	Operators responsibility to ensure compliance
91.613		Materials for Compartment Interiors			Complies
91.App A		Category II Operations	Certification for Category II operations will be conducted after initial Type certification. An approved Airplane Flight Manual , including procedures, instructions and limitations will be provided with each aircraft. A maintenance Document, derived from MSG-3 process, and an aircraft Maintenance Manual are provided with each aircraft.		CAT II certification not sought at this time.
91.App C		Operations in the North Atlantic (NAT) Minimum Navigation Performance Specifications (MNPS) Airspace	Aircraft navigation performance capability exceeds the minimum specifications.		Complies
91 App G		Operations in Reduced Vertical Separation (RVSM) Airspace			Certification has not been requested by Bombardier at this time

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
125.1	(a)	Applicability		Aircraft with a maximum payload capacity of 6,000 pounds or more when common carriage is not involved.	Aircraft Serial #9006 has a maximum payload capacity of 5586 pounds. The operator of this aircraft is not required to comply with 14 CFR part 125.
125.75	(a)	Airplane Flight Manual	An approved AFM complying with 25.1581 is provided with each aircraft. Revision service will be provided with each AFM.	Operator's responsibility to maintain a current AFM.	AFM FAA approved on December 15, 1998 revision original, valid June, 1999. Principal Inspectors are responsible for ensuring the AFM is current.
125.75	(b)	Manual Required	An approved maintenance schedule as per the Maintenance Review Board (MRB) Report, derived from the MSG-3 process, and an Aircraft Maintenance Manual complying with FAR 25.1529 and Appendix H are provided to each operator. These documents reflect the green aircraft as designed by Bombardier Aerospace and supplemented by Completion Center additions.	Operator's responsibility to either carry AFM or manual required by 125.71	Principal Inspectors are responsible for ensuring the AFM is current or manual is approved in accordance with current guidelines.
125.93		Airplane Limitations	The aircraft complies with the ditching requirements of 25.801 except that the equipment required by 25.1411 and 25.1415 are to be installed by the completion center.		Complies
125.183		Carriage of Cargo in Passenger Compartments	Not applicable to green aircraft configuration. There are no approved cargo bins located in the passenger compartment.		Compliance to be determined by Principal Inspector.
125.185		Carriage of Cargo in Cargo Compartments	Not applicable to green aircraft configuration.	Operator's responsibility.	Compliance to be determined by Principal Inspector.

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
125.187		Landing Gear: Aural Warning Device	The landing gear aural warning device is fully compliant with FAR 25.729.		Aircraft does not comply with 14 CFR part 125. 87(b) manual shutoff.
125.189	(a),(b)	Certificate Holder Demonstration - Land			Not applicable as maximum passenger seating capability is 19 passengers.
125.189	(c),(d)	Certificate Holder Demonstration - Ditching	Not applicable to green aircraft configuration.	Operator's responsibility.	Compliance to be determined by Principal Inspector.
125.203		Radio and Navigational Equipment	All equipment prescribed in this paragraph are provided as part of the baseline configuration.		Complies except that compliance for SLRN to be determined by Principal Inspector.
125.205		Equipment Requirements: Airplanes under IFR	All equipment specified for IFR conditions are included in the baseline configuration.		Complies
125.206	(a)	Requirement & Operation	Pitot heat indication system complies with FAR 25.1326.	Operator's responsibility to maintain system in an operable condition.	Complies
125.209		Emergency Equipment: Extended Over water Operations	Not applicable to green aircraft configuration.	Operator's responsibility.	Compliance to be determined by Principal Inspector.
125.211		Seats and Safety Belts	The aircraft is furnished with two approved crew seats fitted with approved safety belts/shoulder harnesses. Completed aircraft to be outfitted with seats and safety belts as per FAR 25.785 as indicated in the Completion Center Handbook.	Operator's responsibility to ensure that approved seat/safety belt is provided for each passenger.	Compliance to be determined by Principal Inspector.
125.213		Miscellaneous Equipment			Compliance to be determined by Principal Inspector.

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
125.213	(a)	Spare Fuses			Not applicable. There is no requirement for spare fuses, since all circuit breakers that are required to be reset are accessible to the flight crew.
125.213	(b)	Windshield Wipers	The aircraft complies with FAR 25.773(b)(1)(i).	Aircraft windshields are coated with waterphopic material and no wipers are installed.	Complies
125.213	(c)	Electrical Power and Distribution	The power supply and distribution meet the requirements of FAR 25.		Complies
125.213	(d)	Means of Indicating Adequate Power	Indication of the adequacy of power supplies to required flight instruments complies with FAR 25.1331		Complies
125.213	(e)	Duplicated Static Pressure	Four independent static pressure systems are provided as part of the baseline configuration.		Complies
125.213	(f)	Placards		Operator's responsibility to ensure that no doors are installed which are required to be open during takeoff and landing to obtain access to an emergency exit	Compliance to be determined by Principal Inspector.
125.213	(g)	Means to Unlock Doors	Not applicable to green aircraft configuration. Operator's responsibility to ensure that a mean are provided to unlock doors.		Compliance to be determined by Principal Inspector.

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
125.215	(a)	Requirement	Normal and emergency cockpit checklists and one engine inoperative climb performance data are included in AFM, Operating Manual and Quick Reference Handbooks provided with each aircraft.	Operator's responsibility to make checklists at pilot station and ensure most current information is available.	Checklists in AFM are FAA approved. Checklists in FCOM and QRH are not FAA approved. Compliance to be determined by Principal Inspector
125.215	(b),(c)	Content	Checklists contain the required procedures.		Checklists in AFM are FAA approved. Checklists in FCOM and QRH are not FAA approved. Compliance to be determined by Principal Inspector.
125.217		Passenger Information	This requirement will be addressed by the completion centers/operators. Not applicable to green aircraft configuration.	Operator's responsibility.	Compliance to be determined by Principal Inspector.
125.219		Oxygen for Medical Use by Passengers	This requirement will be addressed by the completion centers/operators. Not applicable to green aircraft configuration.	Operator's responsibility.	Compliance to be determined by Principal Inspector.
125.221		Icing Conditions: Operating Limitations			AFM prohibits flight into known icing conditions
125.221	(a),(b)(e)	Icing Conditions: Flight		Operator's responsibility.	AFM prohibits flight into known icing conditions.

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
125.221	(c),(d)	Ice Protection Provisions	Certification for operations in icing conditions will be conducted after type certification. Aircraft has ice protection provisions that will meet requirements of FAR 25 and Appendix C to FAR 25 and will be approved for operations in icing conditions prior to aircraft entry into service. AFM and Flight Crew Operating Manual will contain the procedures for use of the anti-icing system.	Operator's responsibility.	AFM prohibits flight into known icing conditions.
125.223	(a)	Equipment Requirements	An airborne weather radar system conforming to TSO C63 is included in the baseline configuration.		Complies
125.223	(b)	Flight in Hazardous Weather Conditions		Operator's responsibility	
125.223	(c)	Instructions and Procedures	Instructions and procedures are included in the aircraft AFM and Flight Crew Operating Manual provided with each aircraft.		Complies
125.223	(d),(e)	Alternate Electrical Power Supply			Compliance not determined
125.224	(a)	Requirement		An approved TCAS conforming to TSO C119 is provided in the baseline configuration.	Complies
125.224	(b)	Operating Information		Procedures and outline of all input sources are included in the Aircraft Flight Manual and Operating Manual.	Complies

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
125.225		Flight Recorders	A digital flight data recorder conforming to TSO C124 is included in the baseline configuration RAL-700-0001, in accordance with FAR 25.1459. The FDR will be fully operational prior to aircraft entry into service.		Compliance to be determined by Principal Inspector.
125.225	(b)	Requirement for FDR	A digital FDR conforming to TSO C124 is included in the baseline configuration in accordance with FAR 25.1459.		Complies
125.225	(c)	Digital Flight Data Acquisition Unit	Aircraft parameters are transmitted to the FDR by a DAU in ARINC 717 digital format.		Complies
125.225	(d)	Aircraft Manufactured after 1991	Aircraft parameters are transmitted to the FDR by a DAU in ARINC 717 digital format.		Complies
125.225	(e)	Operations	The FDR operates continuously from take-off roll to landing roll.		Complies
125.225	(f)	Retention of Recorded Data	The FDR retains the most recent 25 hours of recorded information in non-volatile memory.		Complies
125.225	(h)	Installation Requirements	The FDR installation complies with FAR 25.1459.		Complies
125.225	(i)	Underwater Locator Device	An underwater locator device is part of the FDR as per FAR 25.1459.		Complies
125.227	(a)	Requirement	A CVR conforming to TSO C123 is included in the baseline configuration in accordance with FAR 25.1457. Operation is continuous from power on to power off.		Complies

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
125.227	(c)(1)	Applicable Standards	The CVR complies with the requirements of FAR 25.		Complies
125.227	(c)(2)	Recorder Container - Color, Reflective Tape, underwater Locating	The recorder container is bright orange and reflective tapes and an approved underwater locating device are provided in accordance with FAR 25.1457.		Complies
125.227	(d)	Erasure Feature	The CVR retains the most recent 120 minutes of recorded information in non-volatile memory.		Complies
125.227	(e)	Boom or Mask Microphone	Uninterrupted signals received by the boom or mask microphones are recorded in accordance with FAR 25.1457(c)(5).		Complies
125.249		Maintenance Manual Requirements			
125.249	(a)(1), (a)(2)	Organization Chart & Personnel		Operator's responsibility	Compliance to be determined by Principal Inspector
125.249	(a)(3)	Inspection Programs	An approved maintenance schedule as per the Maintenance Review Board (MRB) Report, derived from the MSG-3 process, and an Aircraft Maintenance Manual complying with FAR 25.1529 and Appendix H are provided to each operator. These documents reflect the green aircraft as designed by Bombardier Aerospace and supplemented by Completion Center additions.	Operator's responsibility.	Complies
125.249	(b)	Maintenance Tracking System		Operator's responsibility.	Compliance to be determined by Principal Inspector

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
125.269		Flight Attendants	No flight attendants are required as maximum passenger seating capacity is 19.	Should an operator desire flight attendant for its operations, the operator will be responsible to comply with this requirement.	Compliance to be determined by Principal Inspector
125.327		Briefing of Passengers Before Flight	Instructions on means of opening doors and emergency exits will be provided to completion centers.	Operator's responsibility.	Compliance to be determined by Principal Inspector
125.329		Minimum Altitudes for Use of Autopilot	The AFM and Flight Crew Operating Manual outline the required conditions for the use of the Autopilot system.		Complies
135. 21		Manual Requirements	An Airplane Flight Manual, Flight Crew Operating Manual and Maintenance Manuals are provided with each aircraft.		Compliance to be determined by Principal Inspector
135.75	(b)	Inspector's Credential: Admission to pilot's compartment: Forward			AEG has not evaluated forward observers seat for operational suitability.
135.93		Autopilot: Minimum Altitudes for Use	The AFM and Flight Crew Operating Manual outline the required conditions for the use of the Autopilot system.		Complies
135.127		Passenger Information		Operators Responsibility	Compliance to be determined by Principal Inspector
135.143	(b)	Approved/Operable Instruments and Equipment	All equipment and instruments included in the green baseline configuration is approved and operable.	Operator's responsibility.	Complies
135.143	(c)	ATC Transponder	Two ATC transponders conforming to TSO-C112 (Mode S) is installed as the baseline configuration.		Complies

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
135.147		Dual Controls Required	Aircraft type certification operating limitations required two pilots and aircraft equipped with dual controls.		Complies
135.149	(a)	Altimeter Adjustable for Barometric Pressure	An altimeter adjustable for barometric pressure is installed as part of baseline configuration.		Complies
135.149	(b),(d), (e)	Additional Equipment			Compliance not determined.
135.149	(c)	Bank and Pitch Indicators	A third pitch and bank indicator complying with the requirement of 121.305(j) is installed as part of baseline configuration.		Complies
135.151	(a)	Requirement and Installation of CVR	A CVR conforming to TSO C123 is included in the baseline configuration. In accordance with FAR 25.1457. Operation is continuous from power on to power off.		Complies
135.151	(d)	Boom and Microphone	Interrupted signals received by the boom or mask microphones are recorded IAW FAR 25.1457(c)(5).		Complies
135.151	(e)	CVR - Recorded Data	Installed CVR comply with this requirement.		Complies

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
135.152		Flight Recorders	A digital flight data recorder conforming to TSO C124 is included in the baseline configuration in accordance with FAR 25.1459. The FDR will be fully operational prior to aircraft entry into service.		Compliance to be determined by Principal Inspector.
135.152	(a)	Requirement for FDR	A digital FDR conforming to TSO C124 is included in the baseline configuration.		Complies
135.152	(c)	Operations	FDR operates continuously from take-off roll to landing roll.		Complies
135.152	(f)	Installation Requirements	The FDR installation complies with FAR 25.1459.		Complies
135.152	(g)	Underwater Locator Device	An underwater locator device is part of the FDR as per FAR 25.1459.		Complies
135.153	(a)	Requirement for GPWS	A GPWS conforming to TSO C92 is included in the base line configuration		Complies
135.153	(c)	Airplane Flight Manual	The Airplane Flight Manual and Operating Manual contains procedures for: (i) The use of the equipment; (ii) Flight crew action with respect to the equipment warnings and indications; (iii) Deactivation for planned abnormal and emergency conditions; (iv) Inhibition of Mode 4 warnings based on flaps being in other than the approved landing configuration is appropriate; (v) An outline of all input sources that must be operating		Complies

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
135.155	(a)	Type and Suitability of Agent	Extinguishing agent in flight deck extinguisher is suitable for use in compartments.	Operator's responsibility	Complies
135.155	(b)	Fire Extinguisher on Flight Deck	One flight deck fire extinguisher (halon) is included in baseline configuration.	Operator's responsibility	Complies
135.155	(c)	Fire Extinguisher in Passenger Compartment	Not applicable to green aircraft configuration. Operator's responsibility to comply with this requirement	This requirement will be addressed by the completion centers/operators.	Compliance to be determined by Principal Inspector
135.157	(b)	Pressurized aircraft.	A flight crew oxygen system with sufficient quantity for operations up to 51,000 feet certified in accordance with applicable requirements of FAR 25.1439 through 25.1453 is provided.	Operator is to establish mission profiles and demonstrate compliance against this requirement for the furnished aircraft.	Compliance to be determined by Principal Inspector. Charts are not available at this time
135.157	(c)	Equipment requirement	Indication of flight crew oxygen supply and pilots use of undiluted oxygen is provided as part of the green baseline configuration.	Operator's responsibility.	Complies
135.158	(a)	Requirement and Operation	Pitot heat indication system complies with FAR 25.1326.		Complies
135.159	(a)-(g)	Equipment Requirements	All equipment specified for night and over-the-top VFR conditions, Items (a) to (g) are included in baseline configuration . Note: No gyroscopic rate-of-turn is installed, however a third attitude instrument system is included in the baseline configuration.		Complies

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
135.161		Radio and navigational: Aircraft Carrying Passenger Under IFR	All radio and navigation equipment specified for night and over-the-top VFR conditions are included in baseline configuration.		Complies
135.163	(a)-(e),(g)(h)	Equipment Requirements	All equipment specified for IFR conditions, Items (a)-(d), (g) and (h) are included in baseline configuration. (e) - Aircraft is equipped with four pitot static systems to provide inputs for the air data system, stall protection system and standby altimeter/airspeed indicator.		Complies
135.165		Radio and Navigational Equipment: Extended Overwater or IFR Operations	All equipment specified for extended Overwater and IFR operations is included in baseline configuration.		Complies (a, b, c) Compliance for (d) to be determined by Principal Inspector
135.167		Emergency Equipment: Extended Overwater Operations	Not applicable to green aircraft configuration.	Operator's responsibility.	Compliance to be determined by Principal Inspector
135.169	(a)	Additional Airworthiness Requirements: 121.213 through 121.283, 121.307 and 121.312	Aircraft is certified to FAR 25 requirements. The compliance against FAR 135.169 requirements is limited to the green aircraft configuration. Compliance for the furnished aircraft is the completion center / operator responsibility.		Compliance to be determined by Principal Inspector
135.169	(d)	Cargo or Baggage Compartments		Operator's responsibility	Compliance to be determined by Principal Inspector
135.170		Materials for Compartment Interiors	All materials used in the aircraft flight deck compartment comply with the standards of 25.853.	Materials for compartment interiors per an STC are completion center / operator responsibility.	Compliance to be determined by Principal Inspector

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
135.171	(a)	Requirement	Crew shoulder harness are provided for each crew member as part of green aircraft baseline configuration.		Complies
135.173	(a)	Airborne Thunderstorm Detection Equipment	Approved lightning detection system conforming to TSO C110 is provided as part of green configuration.		Complies
135.173	(f)	Power Supply			Compliance not determined.
135.175	(a)	Airborne Weather Radar Equipment	Approved digital airborne weather radar equipment conforming to TSO C63 is provided as part of green configuration.		Complies
135.175	(e)	Power Supply			Compliance not determined.
135.180	(a)	Requirement for an Approved TCAS	A TCAS conforming to TSO C119 is installed as the baseline configuration.		Complies
135.180	(b)	Flight Manual Requirements	The Airplane Flight Manual and Flight Crew Operating Manual contain the appropriate		Complies
135.181	(a)	Climb Requirements	Aircraft climb performance data is provided in Aircraft Flight Manual		Complies
135.183	(a)	Engine Failure		Operator's responsibility	
135.183	(b)	Take-Off or Landing		Operator's responsibility	
135.183	(c)	Climb Performance - Critical Engine Inoperative	Aircraft performance data is provided in Aircraft Flight Manual.		Complies
135.185	(a)	Currency Requirement	Actual weight and balance manual provided with each delivered green aircraft. Completion Center to update the manual to reflect their additions.		Compliance to be determined by Principal Inspector

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
135.185	(b)	Aircraft Original Airworthiness Certificate	Actual weight and balance manual provided with each delivered green aircraft. Completion Center to update the manual to reflect their additions.		Compliance to be determined by Principal Inspector
135.227	(a)-(f)	Operations in Icing Conditions			AFM prohibits Flight into known icing conditions.
135.269		Flight Time Limitations and Rest Requirements: Unscheduled Three and Four Pilot Crews		Operator's responsibility	Flight Crew Sleeping Quarters have not been evaluated by the AEG for adequacy.
135.379		Large Transport Category Airplanes: Turbine Engine Powered: Takeoff Limitations	Aircraft performance data is provided in Aircraft Flight Manual.		Published performance charts not available for evaluation. Compliance to be determined by Principal Inspector.
135.381		Large Transport Category Airplanes: Turbine Engine Powered: Enroute Limitations: Single Engine			Published performance charts not available for evaluation. Compliance to be determined by Principal Inspector.
135.385		Large Transport Category Airplanes: Turbine Engine Powered: Landing Limitations: Destination Airports			Published performance charts not available for evaluation. Compliance to be determined by Principal Inspector.
135.387		Large Transport Category Airplanes: Turbine Engine Powered: Landing Limitations: Alternate Airports			Published performance charts not available for evaluation. Compliance to be determined by Principal Inspector.

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
135.419		Approved Aircraft Inspection Program	An approved maintenance schedule as per the Maintenance Review Board (MRB) Report, derived from the MSG-3 process, and an Aircraft Maintenance Manual complying with FAR 25.1529 and Appendix H are provided to each operator. Manuals reflect green aircraft as designed by Bombardier Aerospace and supplemented by Completion Center additions.	Operator's responsibility	Complies
135.421		Additional Airworthiness Requirements	An approved maintenance schedule as per the Maintenance Review Board (MRB) Report, derived from the MSG-3 process, and an Aircraft Maintenance Manual complying with FAR 25.1529 and Appendix H are provided to each operator. Manuals reflect green aircraft as designed by Bombardier Aerospace and supplemented by Completion Center additions..	Operator's responsibility.	Complies
135.421	(a)	Nine Seat or Less		Operator's responsibility (dependent on interior seating capacity)	Compliance to be determined by Principal Inspector

FAR	Sub Req.	Requirement	Compliance	Remark	FSB Finding
135.427	(b)	Manual for Maintenance, Preventive Maintenance and Alterations	An approved maintenance schedule as per the Maintenance Review Board (MRB) Report, derived from the MSG-3 process, and an Aircraft Maintenance Manual complying with FAR 25.1529 and Appendix H are provided to each operator. Manuals reflect green aircraft as designed by Bombardier Aerospace and supplemented by Completion Center additions.	Operator's responsibility	Complies

APPENDIX 6 – THALES HEAD-UP DISPLAY (HUD) SYSTEM

1 BACKGROUND

- 1.1 The Global Express/5000 Flight Standardization Board (FSB) participated in an evaluation of the Thales Head-up Display System (HUD) during its development in the fall of 2004 using a Global Express aircraft and simulator. The FSB conducted certification flight tests, along with the New York Aircraft Certification Office (NYACO), in a Global Express aircraft in Wichita, KS. Flight testing consisted of approximately 40 HUD approaches at several different airports, using CAT 1 procedures, during day, night, Visual Meteorological Conditions (VMC) and Instrument Meteorological Conditions (IMC).
- 1.2 The FSB also evaluated the Global Express/5000 proposed Airplane Flight Manual (AFM) Supplement for HUD Operations. The FSB found the HUD operationally acceptable for all phases of flight and for U.S. CAT I operations. If the Global Express/5000 receives CAT II authorization in the future, the Thales HUD system has been found to be operationally acceptable for CAT II operations without further evaluation.

2 PREREQUISITES FOR HUD TRAINING

Unless the HUD training is integrated with, or occurs sequentially preceding an initial qualification pilot proficiency check, a prerequisite to HUD training in a Global airplane, is prior training, qualification and currency in the Global Express or Global 5000.

3 SIMILARITY OF INSTALLATION

The Thales HUD System installations on Global Express and Global 5000 airplanes have been found to be functionally equivalent. If Thales HUD training and checking requirements are accomplished in one aircraft, training and checking need not be repeated in the other.

4 HUD TRAINING - GENERAL

- 4.1 The HUD pilot training requirements consist of those related to initial and recurrent ground and flight training. It should be noted that the HUD training program focuses principally upon training events flown in the left seat by the Pilot-In-Command (PIC) as Pilot Flying (PF). Nevertheless, HUD training of Pilot Not Flying (PNF) Second-In-Command (SIC) duties in the right seat is required, where there are procedural differences for the PNF, when the PF is heads up (compared to heads down). SIC HUD familiarization flown in the left seat is recommended.
- 4.2 The FSB recommends special emphasis ground training in the following areas:
 - a. Crew coordination;
 - b. Crew briefings and callouts;
 - c. Duties of flying and non-flying pilots; and
 - d. EICAS messages and use of QRH and Checklists applicable to HUD.

5 HUD INITIAL GROUND TRAINING

- 5.1 The pilot-in-command of an aircraft equipped with a Thales HUD system should receive a minimum of 2 hours of ground school training in the operation and use of the HUD.
- 5.2 The initial ground training program should include the following elements:
 - a. Classroom instruction covering HUD operational concepts, crew duties and responsibilities and operational procedures including preflight, normal and abnormal operations, EICAS messages, use of QRH and checklists, miscompare, and failure flags.
 - b. Classroom instruction or Computer Based Training (CBT) on the HUD symbology set and its inter-relationship with airplane aerodynamics, inertial factors, environmental conditions and comparison to Primary Flight Display (PFD).
 - c. A HUD pilot training manual or equivalent material in the Flight Crew Operations Manual (FCOM), which explains the limitations, all modes of operation, clear descriptions of HUD symbology, including limit conditions and failures, and incorporating a crew procedures guide clearly delineating PF and PNF duties, responsibilities and procedural call-outs and responses during all phases of flight during which HUD operations are anticipated.

6 HUD INITIAL FLIGHT/SIMULATOR TRAINING

- 6.1 The pilot-in-command of an aircraft equipped with a Thales HUD system should receive a minimum of 2 hours of flight training in the operation and use of the HUD. A PIC who progresses through initial or transition flight training in a Global Express/5000 aircraft and satisfactory completes HUD system curriculum segments, is recommended by an instructor, and completes a HUD proficiency check by a person authorized by the Administrator, need not complete the recommended 2 hours of flight training.
- 6.2 Flight or simulator training shall be conducted from the left seat and may be conducted in a Thales HUD system equipped aircraft or a Thales HUD system equipped Level C simulator, with a daylight visual display, or a Level D simulator. Simulator approaches, utilizing the HUD, should begin no closer than the final approach fix (FAF) for instrument approaches, and should begin no closer than approximately 1,000 feet AGL (3 - 4 NM) to the runway threshold for visual approaches.
- 6.3 Unless integrated with initial type rating training, flight training dedicated to HUD familiarization and proficiency is in addition to other required training elements.
- 6.4 The following HUD flight training program is generic in nature and should be considered as a guide only.
 - a. Ground Operations:

- (1) Deployment of HUD and stowage, and
- (2) Taxi using HUD under various lighting and visibility conditions.

b. Airwork:

- (1) Straight and level flight, accelerations and decelerations,
- (2) Normal and steep turns, climbs and descents,
- (3) Wind Effects on HUD display,
- (4) Approach to stall recovery; and
- (5) Recovery from unusual attitudes.

c. Visual Take-offs, Approaches and Landings

- 1) Crosswind take-off and landing,
- 2) Visual approaches to runways at night with minimal lighting (“black hole” approaches) and use of FPV to achieve desired descent angle,
- 3) Engine failure on take-off,
- 4) One Engine Inoperative (OEI) landing
- 5) OEI go-around;

d. Instrument Approaches:

- 1) Approaches to the lowest authorized minima including an approach and landing with OEI,
- 2) Missed approach OEI
- 3) Non-precision, and circling approaches (if applicable).

e. Abnormal/Emergency Operations: (as appropriate)

- 1) Wind shear escape,
- 2) EGPWS escape,
- 3) TCAS Resolution Advisory
- 4) HUD failure on approach
- 5) Approaches with the aircraft in a non-normal slat/flap configuration.

6.5 The FSB recommends special emphasis flight training in the following areas:

- a. Approaches to ‘black hole’ airports.
- b. Use of the flare symbol as a cue (not as guidance)
- c. Recovery from unusual attitudes
- d. TCAS resolution advisory
- e. Crosschecking from HUD to cockpit displays, including EICAS and other cockpit indications.

7 HUD INITIAL CHECKING REQUIREMENTS

- 7.1 Upon completion of training, a PIC must be administered a proficiency check conducted in a level 'C' simulator with a daylight visual display, or level 'D' simulator, or on a Thales

HUD System equipped aircraft. This proficiency check may be taken in conjunction with a pilot proficiency check conducted in accordance with FAR Parts 61 or 135 or may be administered as a separate test.

- 7.2 Maneuvers to be evaluated during the HUD proficiency check include as a minimum:

- a. One takeoff
- b. One departure procedures
- c. One instrument approach procedure
- d. One landing

- 7.3 SIC's should be checked on PNF duties during HUD approaches and emergencies.

8 HUD RECURRENT TRAINING AND CHECKING REQUIREMENTS

- 8.1 Selected HUD related ground training subjects as outlined in Paragraph 5 above should be reviewed on a recurrent basis.
- 8.2 At least annually, in conjunction with a pilot-in command proficiency check required by FAR Part 61 or FAR Part 135, a PIC must demonstrate proficiency using the Thales HUD system by satisfactorily performing the maneuvers listed under paragraph 7.2.
- 8.3 At least annually, second-in-command pilots should be evaluated on crew resource management [CRM] responsibilities and procedures as the pilot-not-flying [PNF] when the pilot-flying [PF] is conducting HUD operations.

9 HUD CURRENCY REQUIREMENTS

PIC's should have completed at least three takeoffs, approaches, and landings using the HUD in the Global Express/5000 or have completed three takeoffs, approaches, and landings as the pilot flying (PF) using the Thales HUD system in a Level C simulator with day and night visual displays, or Level D simulator, within the previous 90 days before acting as the PF using the HUD in revenue operations.

APPENDIX 7 – BOMBARDIER ENHANCED VISION SYSTEM (BEVS)

1 BACKGROUND

- 1.1 From December 2004 to May 2005 the GLOBAL EXPRESS/5000 (Global's) Flight Standardization Board (FSB) Chairman participated with the New York Aircraft Certification Office in development, proof of concept, and certification flight tests for the Bombardier Enhanced Flight Vision System [BEVS]. Those flights included over 40 BEVS approaches conducted at several different airports during day, night, Visual Meteorological Conditions (VMC) and Instrument Meteorological Conditions (IMC).
- 1.2 Global Express/5000 BEVS Airplane Flight Manual Supplement was evaluated and found acceptable during the certification flight tests. In May 2005 two Global FSB members received BEVS ground school and simulator training from Bombardier Aerospace Training Center, in Montreal, Quebec, Canada. The FSB found the BEVS operationally acceptable.
- 1.3 The BEVS is certified for descent to 100 feet Height Above Touchdown (HAT) in Instrument Meteorological Conditions (IMC) when operated in accordance with the limitations contained in Global Aircraft AFM Supplement 22. In general, descent below published Decision Height (DH) or Minimum Descent Altitude (MDA) to 100 feet HAT is authorized for straight-in instrument approach procedures other than Category II or Category III approaches. Operators must conform to the requirements of FAR 91.175 (l) and (m) to exercise this capability. (See Note 1.)

2 PREREQUISITES FOR BEVS TRAINING

- 2.1 As a prerequisite for BEVS training, pilots should have successfully completed Thales HUD training in the Global Express/5000 aircraft, however HUD and BEVS training can be conducted concurrently. (See Note 2.)
- 2.2 For operations conducted in accordance with FAR 91.175 (l) & (m), ground training on the Global Express/5000 aircraft for low visibility procedures, or CAT II training, is required if such training is not included in the BEVS training.

3 SIMILARITY OF INSTALLATION

The Bombardier Enhanced Vision System installations on the Global Express and the Global 5000 airplanes have been found to be functionally equivalent. If BEVS training and checking requirements are accomplished in one aircraft, training and checking need not be repeated in the other.

4 BEVS TRAINING - GENERAL

- 4.1 The BEVS pilot training requirements consist of those related to initial and recurrent ground and flight training. It should be noted that the HUD and BEVS training programs focus principally upon training events flown in the left seat by the Pilot-In-Command

(PIC) as the Pilot Flying (PF). Nevertheless, BEVS training in the duties of the Pilot Not Flying (PNF) in the right seat is required. SIC BEVS familiarization flown in the left seat is recommended.

4.2 The FSB recommends special emphasis ground training in the following areas:

- a. Crew briefings and callouts.
- b. Duties of pilot flying and pilot not flying.
- c. Crew coordination and Crew Resource Management (CRM).
- d. Transition from BEVS imagery to non-BEVS visual conditions. Maximum use should be made of videotapes of actual EVS approaches.
- e. Instruction on where on the BEVS to look for approach lights which, depending on the aircraft altitude, may be within or below the HUD display of HSI information during low weather approaches and, therefore, in a different location than during non-low weather approaches.
- f. Importance of cross-checking the HUD instrumentation presentations against the BEVS visual scene presentation to enable the pilot to recognize malfunctions of the ground based navigational equipment and improper presentation of elements in the visual scene during the approach.
- g. Instruction in the use the FMS Temperature Compensation feature, which is a limitation in the AFM supplement for LNAV/VNAV approaches per FAR 91.175 (l) & (m) at airfield temperatures below ISA.
- h. Instruction in the use of the autopilot with auto-throttle coupled approaches allowing for better pilot monitoring of the BEVS image.

5 BEVS INITIAL GROUND TRAINING

5.1 The pilot-in-command of an aircraft equipped with a Bombardier Enhanced Vision System should receive a minimum of 2 hours of ground school training in the operation and use of the BEVS.

5.2 The initial ground training program should include the following elements:

- a. Classroom instruction covering BEVS operational concepts, crew duties and responsibilities and operational procedures including preflight, normal and abnormal operations, EICAS messages, use of QRH and checklists, miscompare, and failure flags.
- b. Classroom instruction or Computer Based Training (CBT) on the BEVS symbology set and its inter-relationship with airplane aerodynamics, inertial factors, environmental conditions and comparison to HUD symbology and the Primary Flight Display (PFD).
- c. A BEVS pilot training manual or equivalent material in the Flight Crew Operations Manual (FCOM), which explains the limitations, all modes of operation, clear descriptions of BEVS symbology, including limit conditions and failures, and incorporating a crew procedures guide clearly delineating PF and

PNF duties, responsibilities and procedural call-outs and responses during all phases of flight during which BEVS operations are anticipated.

- d. Instruction in the effective and appropriate monitoring by the PNF on BEVS imagery presented on the FMS CDU.

6 BEVS INITIAL FLIGHT/SIMULATOR TRAINING

- 6.1 The pilot-in-command of an aircraft equipped with a Bombardier Enhanced Vision System should receive a minimum of 2 hours of flight or simulator training in the operation and use of the BEVS.
- 6.2 Flight or simulator training shall be conducted from the left seat and may be conducted in a BEVS equipped aircraft or a BEVS equipped Level C simulator, with a daylight visual display, or a Level D simulator. Simulator approaches, utilizing BEVS, should begin no closer than the final approach fix (FAF) for instrument approaches, and should begin no closer than approximately 1,000 feet AGL (3 - 4 NM) to the runway threshold for visual approaches.
- 6.3 Unless integrated with initial type rating training, flight training dedicated to BEVS familiarization and proficiency is in addition to other required training elements.
- 6.4 The following flight training program is generic in nature and should be considered as a guide only.
 - a. Ground Operations:
 - (1) Initialization of BEVS.
 - (2) Taxi using BEVS under various lighting and visibility conditions.
 - b. Airwork:

There is no requirement for airwork training using BEVS.
 - c. Visual Take-offs, Approaches and Landings
 - (1) Normal takeoff and landing with crosswind.
 - (2) Visual approaches at night with minimal lighting ("black hole" approaches) and use of FPV and Flight Path Reference Cue (FPRC) to achieve desired descent angle.
 - d. Instrument Approaches:
 - (1) Precision and non-precision straight-in approaches to the lowest published minima with missed approaches or landings.
 - (2) Precision and non-precision straight-in approaches to lowest published

minima and acquisition of a sufficient BEVS image to continue to 100 feet HAT. Acquisition of required visual references below 100 feet HAT without the aid of BEVS followed by a landing or a missed approach.

e. Abnormal/Emergency Operations: (as appropriate)

- (1) Failure of BEVS during approach.
- (2) Failure of BEVS below published minima but above 100 feet HAT.

6.5 The FSB recommends special flight training emphasis in the following areas:

- a. Transition from BEVS imagery to non-BEVS, visual conditions and acquisition.
- b. Crew briefings and callouts with emphasis on the duties of the PF and pilot monitoring.
- c. Importance of the “design eye position” in acquiring the proper BEVS image.
- d. Precision and non-precision instrument approaches in both day and night conditions.
- e. Use of the on/off switch “clear” mode.
- f. AFM performance and obstacle clearance on go-around from 100 feet HAT.

7 BEVS INITIAL CHECKING REQUIREMENTS

7.1 Checking requires a PIC proficiency check conducted in a level 'C' simulator or level 'D' simulator, that has been qualified by the National Simulator Program for HUD and BEVS, or on a HUD and BEVS equipped Global aircraft. This proficiency check may taken in conjunction with a pilot proficiency check conducted in accordance with FAR Parts 61 or 135 or may be administered as a separate test.

7.2 Maneuvers to be evaluated during the BEVS proficiency check include as a minimum:

- a. One instrument approach and landing with acquisition of the BEVS image before published minima and acquisition of required visual references without the aid of BEVS below 100 feet HAT.
- b. One instrument approach and acquisition of the BEVS image before published minima and failure of the BEVS below published minima requiring a missed approach above 100 feet HAT.

7.3 SIC's should be checked on PNF duties during BEVS approaches and emergencies.

8 BEVS RECURRENT TRAINING AND CHECKING REQUIREMENTS

8.1 Selected BEVS related ground training subjects as outlined in Paragraph 5 above should be reviewed on a recurrent basis.

8.2 At least annually, in conjunction with a pilot-in command proficiency check required by FAR Part 61 or FAR Part 135, a PIC must demonstrate proficiency using the BEVS by

satisfactorily performing the maneuvers listed under paragraph 7.2.

- 8.3 At least annually, second-in-command pilots should be evaluated on crew resource management [CRM] responsibilities and procedures as the pilot-not-flying [PNF] when the pilot-flying [PF] is conducting BEVS operations.

9 BEVS CURRENCY REQUIREMENTS

PIC's should have completed at least one night takeoff, approach, and landing using the BEVS in the Global Express/5000 or have completed at least one takeoff, approach, and landing as the pilot flying (PF) using the BEVS in a Level C simulator with day and night visual displays, or Level D simulator, within the previous 90 days before acting as the PF using the BEVS in revenue operations. The BEVS currency requirement may be credited toward the Thales HUD currency requirements (See Appendix 6).

NOTE 1: Title 14 Code of Federal Regulations (CFR) 14 Section 91.175 (c) states that a pilot may continue an approach below the authorized MDA or continue the approach below the authorized DH if subparagraphs (1), (2), and (3) are met. Subparagraph (1) states, in pertinent part, "The aircraft is continuously in a position from which a descent to a landing on the intended runway can be made....". Subparagraph (2) states, in pertinent part, "The flight visibility is not less than the visibility prescribed in the standard instrument approach procedures being used". Subparagraph (3) states, in pertinent part, "...at least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot...". All three subparagraphs: (1), (2), and (3) must be met. BEVS is certified to allow the pilot to use BEVS imagery to see the visual references required by subparagraph (3). It is not certified or authorized and cannot be used to satisfy the flight visibility requirements of subparagraph (2). The pilot must determine flight visibility without the use of EVS imagery.

NOTE 2: These EVS requirements assume that a pilot entering an BEVS training program is trained and proficient in the use of the Thales HUD. If a pilot is not trained and proficient in the use of the Thales HUD, the HUD training, identified in Appendix 6 of this report, may be accomplished concurrently with the provisions of these BEVS training requirements.